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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:		
Thomas C. Schulz, et al.	Art Unit:	**Not Yet Assigned**
Serial No. **10/551,603**	Examiner:	**Not Yet Assigned**
Filed: **September 30, 2005**		
For: **Methods for Neural Differentiation of Embryonic Stem Cells Using Protease Passaging Technique**		

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Respectfully submitted,

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Date: December 28, 2005

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Attorney Docket No.: 18377-0067

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Sheet 1 of 3

Complete if Known	
Application Number	10/551,603
Filing Date	September 30, 2005
First Named Inventor	Thomas Schulz
Art Unit	
Examiner Name	
Attorney Docket Number	18377-0067

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number: Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-5,453,357	09-26-1995	Hogan	
		US-5,589,376	12-31-1996	Anderson, et al.	
		US-5,753,506	05-19-1998	Johe	
		US-5,766,948	06-16-1998	Gage, et al.	
		US-5,843,780	12-01-1998	Thomson	
		US-5,851,832	12-22-1998	Weiss, et al.	
		US-5,958,767	09-28-1999	Snyder, et al.	
		US-5,968,829	10-19-1999	Carpenter	
		US-6,200,806 B1	03-13-2001	Thomson	
		US-6,245,566	06-12-2001	Gearhart, et al.	
		US-6,280,718	08-28-2001	Kaufman, et al.	
		US-6,562,619 B1	05-13-2003	Gearhart, et al.	
		US-2002/0146678 A1	10-10-2002	Benvenisty	
		US-2002/0160510	10-31-2002	Hariri	
		US-2002/016794	11-07-2002	Wernet	
		US-2003/0008392 A1	01-09-2003	Thomson	
		US-2003/0166272 A1	09-04-2003	Abuljadayel	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Patent Document Number: Country Code[3] Number[4] Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
		WO 95/00632 A1	01-05-1995	Amgen, Inc.		
		WO 97/32033	09-04-1997	Vanderbilt University		Abstract
		WO 98/43679 A1	10-08-1998	The Johns Hopkins University School of Medicine		
		WO 99/32606	07-01-1999	Brustle		Abstract
		WO 99/53021	10-21-1999	Bresagen Limited		
		WO 00/27995	05-18-2000	Monash University		
		WO 01/51611	07-19-2001	Bresagen Limited		
		WO 04/029203 A2	04-08-2004	BresaGen Limited		
		WO 04/076624 A2	09-10-2004	Bresagen, Inc., University of Georgia Research foundation, Inc.		
		DE 197 56 864 C1	12-19-1997	Vossius, et al.		Abstract

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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the articles (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		BAIN, et al., (1995) "Embryonic Stem Cells Express Neuronal Properties in *Vitro*," *Dev. Biology*, 168:342-357.	
		BAQET, et al., (1991) "Comparison of the effects of various amino acids on glycogen synthesis, lipogenesis and ketogenesis in isolated rat hepatocytes," *Biochem J.* 273:57-62.	
		BIEBERICH, (2004) "Integration of glycosphingolipid metabolism and cell-fate decisions in cancer and stem cells: review and hypothesis," *Glycoconjugate Journal*, 21:315-327.	
		BROOK, et al., (1997) "The origin and efficient derivation of embryonic stem cells in the mouse," *Proc. Natl. Acad. Sci.*, 94:5709-5712.	
		BRUSTLE, et al., (1997) "In *vitro*-generated neural precursors participate in mammalian brain development," *Proc. Natl. Acad. Sci.*, 94:14809-14814.	
		BUCCOLIERO, et al., (2003) "The roles of ceramide and complex sphingolipids in neuronal cell function," *Pharmacological research*, 47: 409-419.	
		CARPENTER, et al., (2001) "Enrichment of neurons and neural precursors from human embryonic stem cells," *Exper. Neuro.*, 172:383-397.	
		COLLINARI, et al., (1987) "Mechanisms of Transport of Amino Acids Across Membranes," *Ann, Rev. Nutr.*, 7:75-90.	
		ENSENAT, et al., (2001) "Transforming growth factor-β1 stimulates vascular smooth muscle cell L-proline transport by inducing system A amino acid transporter 2 (SAT2) gene expression," *Biochem Journal*, 360:507-512.	
		ESDAR, et al., (2001) "Differentiation-associated apoptosis of neural stem cells is effected by Bcl-2 overexpression: impact on cell lineage determination," *European Journal of Cell Biology*, 80:539-553.	
		FRAICHARD, et al., (1995) "In *vitro* differentiation of embryonic stem cells into glial cells and functional neurons," *Journal of Cell Science*, 108:3181-3188.	
		FREMEAU JR., et al., (1992) "Molecular Cloning and Expression of a High Affinity L-Proline Transporter Expressed in Putative Glutamatergic Pathways of Rat Brain," *Neuron*, 8:915-925.	
		GOLDMAN, (2003) (National Institute of Health Symposium, NIH Research: Recent Progress and Future Promise of Human Embryonic Stem Cells, June 12, 2003, abstract available at stemcells.nih.gov/news/symposiumspeakers.asp#7 as of July 30, 2003).	
		HANCOCK, et al., (2000) "Neuronal Differentiation of Cryopreserved Neural Progenitor Cells Derived from Mouse Embryonic Stem Cells," *Biochem. Biophys. Res. Commun.*, 271:418-421.	
		HENDERSON, et al., (2002) "Preimplantation human embryos and embryonic stem cells show comparable expression of stage-specific embryonic antigens," *Stem Cells*, 20:329-337.	
		HERGET, et al., (2000) "Production of ceramides causes apoptosis during early neural differentiation in vitro," *Journal of Biological Chemistry*, 275(39):30344-30354.	
		HOUCK, et al., (1985) "Proline is Required for the Stimulation of DNA Syntehsis in Hepatocyte Cultures by EGF," *In Vitro Cell Dev. Biol.*, 21:121-124.	
		KANATSU, et al., (1996) "In vitro analysis of epiblast tissue potency for hematopoietic cell differentiation," *Development*, 122(3):823-830.	
		KANATSU, et al., (1997) "In vitro analysis of potency restriction during epiblast differentiation," *Leukemia* (Suppl.), 3:457-459.	
		KAWASAKI, et al., (2000) "Induction of midbrain dopaminergic neurons from ES cells by stromal cell-derived inducing activity," *Neuron*, 28:31-40.	
		KAWASAKI, et al., (2002) "Generation of dopaminergic neurons and pigmented epithelia from primate ES cells by stromal cell-derived inducing activity," *Proc. Natl. Acad. Sci.*, 99(3):1580-1585.	
		KIM, et al., (2002) "Dopamine neurons derived from embryonic stem cells function in an animal model of Parkinson's disease," *Nature*,418:50-56.	
		KUO, et al., (2003) "Differentiation of monkey embryonic stem cells into neural lineages," *Biol. Reproduction*, 68:1727-1735.	
		LI, et al., (1998) "Generation of purified neural precursors from embryonic stem cells by lineage selection," *Current Biol.*, 8:971-974.	

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		MCGIVAN, et al., (1994) "Regulatory and molecular aspects of mammalian amino acid transport," *Biochem. J.*, 299:321-334.	
		MUMMERY, et al., (1991) "Visceral-endoderm-like cell lines induce differentiation of murine P19 embryonal carcinoma cells," *Differentiation*, 46:51-60.	
		MUMMERY, et al., (1993) "Fibroblast growth factor-mediated growth regulation and receptor expression in embryonal carcinoma and embryonic stem cells and human germ cell tumours," *Biochem. Biophys. Res. Commun.*, 191(1):188-195.	
		OKABE, et al., (1996) "Development of neuronal precursor cells and functional postmitotic neurons from embryonic stem cells in vitro," *Mech. Dev. Biol.*, 59:89-102.	
		O'SHEA, (2002) "Neural differentiation of embryonic stem cells," *Meth. In Mol. Biol.*, 198:3-14.	
		RATHJEN, et al., (1998) "Properties and uses of embryonic stem cells: prospects for application to human biology and gene therapy," *Reprod. Fertil. Dev.*, 10:31-47.	
		RATHJEN, et al., (1999) "Formation of primitive ectoderm like cell population, EPL cells, from ES cells in response to biologically derived factors," *Journal of Cell Science*, 112:601-612.	
		RATHJEN, et al., (2002) "Direct differentiation of pluripotent cells to neural lineages: homogeneous formation and differentiation of a neurectoderm population," *Development*, 129:2649-2662.	
		RENONCOURT, et al., (1998) "Neurons derived in vitro from ES cells express homeoproteins characteristic of motoneurons and interneurons," *Mech. Dev.*, 79:185-197.	
		REUBINOFF, et al., (2001) "Neural progenitors from human embryonic stem cells," *Nature Biotech*, 19(12):1134-1140.	
		RICH, (1995) "Primordial germ cells are capable of producing cells of the hematopoietic system in vitro," *Blood*, 86(2):463-472.	
		SASAI, (2002) "Generation of dopaminergic neurons from embryonic stem cells," *J. Neurol*, 249(2):1141-1144.	
		SCHULDINER, et al., (2001) "Induced neuronal differentiation of human embryonic stem cells," *Brain Res.*, 913:201-205.	
		STRUBING, et al., (1995) "Differentiation of pluripotent embryonic stem cells into the neuronal lineage in vitro gives rise to mature inhibitory and excitatory neurons," *Mech. Dev.*, 53:275-287.	
		SUGDEN, et al., (1984) "Proline and Hepatic Lipogenesis," *Biochim, Biophys. Acta*, 798:368-373.	
		TALBOT, et al., (1993) "Alkaline phosphatase staining of pig and sheep epiblast cells in culture," *Molecular Reprod. Develop.*, 36:139-147.	
		TOMAN, et al., (2000) "Role of ceramide in neuronal cell death and differentiation," *Journal of Neurotrauma*, 17(10):891-898.	
		TROPEPE, et al., (2001) "Direct neural fate specification from embryonic stem cells: a primitive mammalian neural stem cell stage acquired through a default mechanism," *Neuron*, 30:65-78.	
		YING, et al., (2003) "Conversion of embryonic stem cells into neuroectodermal precursors in adherent monoculture," *Nat. Biotech.*, pages 1-4.	
		ZHANG, et al., (2001) "In vitro differentiation of transplantable neural precursors from human embryonic stem cells," *Nature Biotech.*, 19(12):1129-1133.	

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